

SMALL BUSINESS EXPOSURE INDEX

LaMontagne et al (in review): An Exposure Prevention Rating Method for Intervention Needs Assessment and Effectiveness Evaluation: the SBEI

SITE NAME: _____ DATE _____

ACCOMPANIED BY: _____ TITLE: _____

1. DEFINED GROUP w/ similar potential chemical exposure (choose by **area, process, product, dept,...**) _____

2. OTHER PROCESSES in area & (#employees at each) _____

3. **No. of employees** (all shifts) GROUP _____ & TOTAL _____

4. WORKER DENSITY (sq. ft Area per EE) _____

5. BUILDING characteristics/conditions: CEILING height _____
(Incidental potential exposure NOT related to production)
circle: dampness, **pest control, renovations**, painting, other _____

	YES	NO	DESCRIBE
6. Contaminants visible in the AIR (dust, mist, process plume)?	<input type="checkbox"/>	<input type="checkbox"/>	_____
7. Contaminants visible on SURFACES (dust, grit, film, liquid)?	<input type="checkbox"/>	<input type="checkbox"/>	_____
8. Mod/strong ODORS detectable in the area?	<input type="checkbox"/>	<input type="checkbox"/>	_____
9. Indications of recent/on-going LEAKS or SPILLS in the area?	<input type="checkbox"/>	<input type="checkbox"/>	_____

10. HOUSEKEEPING in the area is:

Very Good (**system, time**) ☐
Good (no out of place) ☐
Acceptable (gen. clean, few) ☐
Bad (hazards, dirty) ☐
Very Bad (long time) ☐

11. Overall AIR QUALITY in the area is:

Very Good (eng. controls) ☐
Good (no odor, visible) ☐
Acceptable (comfortable) ☐
Bad (discomfort, odor) ☐
Very Bad (ppe, **complaints**) ☐

12. Are employees potentially exposed to PHYSICAL stressors? YES ☐ NO ☐ N/A ☐ Describe _____
If yes, circle+ (#ee's): heat() cold() noise() radiation() lighting() other() _____

13. Are employees exposed to SAFETY hazards? ☐ ☐ ☐ _____
If yes, circle+ (#ee's): fire() elect() w/w() guarding() gas() other() _____

14. Are employees exposed to ERGONOMIC stressors? ☐ ☐ ☐ _____
If yes, circle+ (#ee's): rep/motion() ex/force() awk/pos() **incentive/rest**() mach/pacing()
tools() floor() lift/move/heavy() bench/seat() shoulder/knee() other() _____

Areas/issues requiring further explanation:

MATERIAL

Material Potential: Looking at the characteristics of the materials, how hazardous are they and how much and in what form are they used?

Hazard Analysis: To what extent are there hazard analysis procedures in place to minimize the *Material Potential*? (Note: This category may overlap with the H&S Program Evaluation form)

For this section, review the materials used by the defined group (see #1) by: **reviewing area specific MSDS's, conducting management Interviews** and/or direct observation of the work. (Note: list materials from area and review MSDS's later for specific hazard info.)

MATERIALS USED (1:common name/tradename, 2:principle ingredients & %, 3:Form: S,L,G)

A. _____

B. _____

C. _____

D. _____

POTENTIAL	Materials			
MATERIAL POTENTIAL:	A	B	C	D
(Major)				
1. Contains Low, No threshold materials (C = carc, M = muta, T = terat, A = asthma)				
2. Skin sensitizer(SS) / skin designation(S)				
3. Daily amt. used (L=bench, M=drum, H=vat)				
(Minor)				
4. High vapor pressure (> 5mm Hg)				
5. Combustion/decomp. prod. likely (process)				
6. Combustion/decomp. prod. possible (MSDS)				
7. More than trace amount of #1				

PROTECTION				
HAZARD ANALYSIS:				
(Major)				
1. Material inventory maintained (list)				
2. MSDS's present in defined group (delete) ---	-----	-----	-----	-----
3. MSDS's available, all shifts				
4. Hazard Assessment done (OSHA PPE)				
5. Monitoring routinely done				
(Minor)				
6. Monitoring (sampling) ever done				
7. Eyewash / shower present (if needed)				
8. Chem. emergency plan posted/available				
9.. Proper signage present (labels, warnings)				

Comments:

PROCESS

Process Potential: Looking at the characteristics of the process, how likely is it that exposure could occur?

Engineering Controls: To what extent have ventilation and process controls been put in place to decrease the *Process Potential*?

POTENTIAL				
PROCESS POTENTIAL:				
(Major)	Yes	No	Don't Know	Describe
Process involves(circle specific item):				
1. Spraying as primary activity (painting/coating)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Visible mist or spray, e.g. as byproduct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Bulk transfer of material (pot/airborne)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Abrasive blasting (inc. small cabinets)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Welding, brazing, flame/arc cutting/spraying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Crushing, sanding, grinding, buffing (circle)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Electroplating operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Elevated temperatures (>> ambient)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(Minor)				
Process & job(not maintenance) involves:				
9. Open tanks or containers(not housekeeping)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Mechanical mixing (dust/liquid = exposure)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Molten metal , e.g. solder pots, casting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Release of particulates (NOC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Machining: lathe, drill, mill, EDM, other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. Plastic molding operations/extrusion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Materials in gaseous form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16. Elevated pressure , part of process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. Drying of liquid covered parts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18. Other process element	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PROTECTION				
ENGINEERING CONTROLS:				
(Major)				
1. Process totally automated (finished part out)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Process totally enclosed (product in/out only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. LEV – appropriate and working	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Operator totally enclosed or separated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(Minor)				
5. Process semi-automated (some oper. work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Process partially enclosed (some protection)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. HVAC // dilution ventilation/ present/working	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. LEV present, but not appropriate/adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. No make up air problems(neg press/drafts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Other eng control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

HUMAN INTERFACE

Human Interface: How likely is it that people will come into contact with the material, or be exposed to it as they do their jobs?

Personal Protective Equipment: To what extent are PPE, work practices, and administrative controls, utilized to decrease the *Human Interface*?

POTENTIAL				
HUMAN INTERFACE:				
(Major)	Yes	No	Don't Know	Describe
1. Manual application of liquid or powder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Manual mix, add, stir chemicals(not <i>maint</i>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Use of compressed air; <i>cleaning</i> or process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Employees <i>smoke</i> at work stations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Ingestion significant route of exposure/MSDS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Work practice contributes to potential	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(Minor)				
7. Dipping parts into liquid (manual)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Heavy workload / Increased metabolic rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Employees <i>eat or drink</i> at work station	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Contact with work surface contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Manual cleaning <i>part of the job</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. <i>Other interface</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PROTECTION				
PERSONAL PROTECTIVE EQUIPMENT:				
(Major)				
1. <i>Respirators/dust masks required</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. <i>Protective clothing/equipment req'd: gloves,uniform,glasses,shoes,other:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Material handling minimized/reduced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Work practice increases protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(Minor)				
5. <i>Administrative Control procedure in place</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Respirators/dust masks used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Protective clothing <i>available/appropriate</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Hand <i>cleaning facilities</i> nearby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Designated <i>eating/break areas used</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Eyewash/shower adequate (bottles?)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. <i>Other protection</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments:

Additional File 2, published with:
LaMontagne et al (2009): A hazardous substance exposure prevention rating method for intervention needs assessment and effectiveness evaluation: the Small Business Exposure Index. *Environ Health*.